

Air Pollution and Cancer— Risk Assessment Methodology and Epidemiological Evidence: A Preface

by Lars Friberg*

In the fall of 1977, a Swedish Governmental Committee on Energy and Environment submitted to the Swedish government an extensive evaluation concerning environmental and health effects of different sources of energy including nuclear energy and fossil fuels. The National Swedish Environment Protection Board was charged with responsibility for a critical review of potential environmental and health effects relating to the use of fossil fuels as energy sources while the National Swedish Institute for Radiation Protection was charged with a similar review concerning effects from the use of nuclear power.

During the review several key questions arose which were felt to be of importance not only for Sweden, but also more generally. The Governmental Committee on Energy and Environment therefore asked the Karolinska Institute to arrange an international meeting for the discussion of such questions. The meeting was organized by the Karolinska Institute through its Department of Environmental Hygiene, which is also a World Health Organization Collaborating Center for Environmental Health Effects and was held in Stockholm March 8-11. A main objective of the meeting was to consider current scientific knowledge about carcinogenic substances in air in relation to epi-

demiological data on lung cancer and available methods for assessing cancer risks from experimental data. The specific questions addressed to the participants of the symposium were the following. (1) Can part of the increased incidence of lung cancer in urban communities be related to exposure to air pollutants? If so, is it possible to quantify dose-response relationships after control for smoking habits, occupational habits and other habitual or socioeconomic factors? (2) Can the approach used for radiation protection standards, i.e., to extrapolate dose-response relationships to low doses (for which no epidemiological evidence exists), be applied to combustion pollutants? If so, for which pollutants and effects would such an approach appear justified? (3) Do urban air pollutants contain substances which have proven carcinogenic or mutagenic in animal models, and can such data be used for risk evaluations in man?

This volume of *Environmental Health Perspectives* contains the consensus report from a Task Group of about 30 scientists from different countries as well as working papers presented to the meeting. The World Health Organization assisted in selection of participants for the meeting. It is hoped that the information given in the report and working papers will also be of value for countries other than Sweden involved in decisions concerning health hazards from energy production, as well as evaluation of cancer risk from other sources.

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